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10/046,886	01/15/2002	Alan F. Washburn	31936	2636

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HOVEY, WILLIAMS, TIMMONS & COLLINS
Suite 400
2405 Grand
Kansas City, MO 64108

EXAMINER

TORRES, ALICIA M

ART UNIT

PAPER NUMBER

3671

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,886

Applicant(s)

WASHBURN, ALAN F.

Examiner

Alicia M Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☒ Claim(s) 12, 19 and 24-26 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Specification

1. The disclosure is objected to because of the following informalities:

it appears the word “new” in line 20 of page 1 should be changed to --need--;

reference number “74” for the upright, pivot axis, in line 1 of page 6 should refer to the second pivot axis as shown in figure 9;

reference number “82” for the second pivot axis in line 5 of page 6 should refer to the upright pivot axis as shown in figure 9;

the word “to” should be removed from line 11 of page 7;

the word “position” should be changed to --positioned-- in line 25 of page 7.

Appropriate correction is required.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “92” has been used to designate two sheaves in figure 9. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “156” has been used to designate both an obstruction and a tree guard in figure 3. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to because it appears that obstruction "156" in figure 13, should be obstruction "210" as described in line 24 of page 9 of the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 12 is objected to because of the following informalities: the limitation --deck-section-- in line 4 should be changed to "deck-side section".

Claim 19 is objected to because of the following informalities: the word "an" in line 2 should be changed to --and--. Appropriate correction is required

Claim 24 recites the limitation "the arm" in line 6. There is insufficient antecedent basis for this limitation in the claim.

DETAILED ACTION

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Scarborough.

Scarborough discloses a pull-behind mower (10) for cutting ground vegetation, the mower (10) comprising:

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a frame (12) presenting a fore end, an aft end, and a pair of laterally spaced sides;

a hitch assembly coupled to the frame (12) proximate the fore end and adapted to couple the frame to a vehicle (110, see figure 9);

a pair of laterally spaced wheels (unnumbered) coupled to the frame (12) proximate the aft end and adapted to rollingly support the frame (12) on the ground; and

a mowing deck (26) pivotally coupled to the frame (12) proximate the fore end and operable to cut the vegetation when positioned proximate the ground, the deck (26) being pivotable relative to the frame (12) between a retracted position wherein the deck is positioned primarily between the laterally spaced sides and an extended position wherein the deck is positioned primarily outside the laterally spaced sides (see figures 1);

the deck (26) pivoting through a first pivot angle of more than about 20° when pivoted between the extended and retracted positions (see figure 1), the pivot angle being more than about 30°, as per claims 2 and 3;

and a biasing mechanism for biasing the deck toward the extended position (see column 3, lines 7-10), as per claim 4.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scarborough in view of Bird.

The device is disclosed as applied to claim 4 above. However, Scarborough fails to disclose a biasing mechanism including a torque element rigidly coupled to and extending from the support arm and a spring coupled between the torque element and the frame, the torque element presenting a proximal end coupled to the support arm and a distal end coupled to the spring.

Bird discloses a biasing mechanism including a torque element (17) rigidly coupled to and extending from the support arm (unnumbered, extension of torque element, 17) and a spring (16) coupled between the torque element (17) and the frame (12), the torque element (17) presenting a proximal end coupled to the support arm (unnumbered) and a distal end coupled to the spring (16).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the biasing mechanism of Bird on the device of Scarborough in order to return the mower head to its original position.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scarborough in view of Hatfield.

Scarborough discloses the device as applied to claim 1 above. However, Scarborough fails to disclose a motor coupled to the frame proximate one of the sides of the fore end, the mowing deck being coupled to the frame proximate the other of the sides, the motor powering the deck.

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Hatfield discloses a motor (28) coupled to the frame (12) proximate one of the sides of the fore end, the mowing deck (24) being coupled to the frame (12) proximate the other of the sides, the motor (28) powering the deck (24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the mower on the opposite side of the frame as taught by Hatfield on the device of Scarborough in order to evenly distribute weight over the frame.

9. Claims 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatfield in view of Smith '299.

Hatfield discloses a pull-behind mower (10) for cutting ground vegetation, the mower (10) comprising:

a frame (12) adapted to be coupled to a vehicle (18) and rollingly supported on the ground;

a motor (28) coupled to the frame (12); and

a mowing deck (24) coupled to the frame (12) for pivotal movement relative to the frame (12) on first and second pivot axes (see figures 3 and 5); and

a drive train (figure 7) for drivingly coupling the motor (28) to the deck (24) so that the motor (28) powers the deck (24); and

the deck (24) being pivotable relative to the frame (12) on the first pivot axis between a retracted position and an extended position (see figures 2 and 3),

the deck (24) being pivotable relative to the frame (12) on the second pivot axis between an engaged position and a disengaged position (see figures 4 and 5),

the first and second pivot axes being at least substantially perpendicular to one another,

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as per claim 8;

wherein the first pivot axis is generally upright, as per claim 9;

a support arm (56) coupled between the frame (12) and the deck (24) and operable to at least partly support the deck (24) relative to the frame (12),

the support arm (56) providing for the pivoting of the deck (24) between the extended and retracted positions (see figures 2 and 3) and the pivoting of the deck between the engaged and disengaged positions (see figures 4 and 5), as per claim 11;

and the deck pivoting through a first pivot angle of more than about 20° when pivoted between the extended and retracted positions (see figures 2 and 3),

the deck pivoting through a second pivot angle of more than about 30° when pivoted between the engaged and disengaged position (see figures 4 and 5), as per claim 10.

However, Hatfield fails to disclose wherein the first and second pivot axes are intersecting and that the drive train includes a U-joint that is centered proximate to the intersection of the pivot axes;

and the arm including a frame-side section rotatably coupled to the frame and a deck-side section rigidly coupled to the deck,

the frame-side section and the deck-section being hingedly intercoupled, as per claim 12;

and the frame-side section being rotatable relative to the frame on the first pivot axis,

the deck-side section being pivotable relative to the frame-side portion on the second pivot axis, as per claim 13;

a hinge for coupling the frame-side section and the deck-side section, the hinge providing for pivotal movement of the deck-side section relative to the frame-side section on the second pivot axis, as per claim 14. .

Smith '299 discloses a similar device wherein the mowing deck (82) is coupled to the frame (34) for pivotal movement on first and second intersecting axes (see figures 5 and 6) and a U-joint (38) included in the drive train centered proximate to the intersecting axes;

and wherein and the arm (52) includes a frame-side section rotatably coupled to the frame and a deck-side section rigidly coupled to the deck (see figure 3),

the frame-side section and the deck-section being hingedly intercoupled, as per claim 12;
and the frame-side section being rotatable relative to the frame (34) on the first pivot axis,
the deck-side section being pivotable relative to the frame-side portion on the second pivot axis, as per claim 13;

a hinge (32) for coupling the frame-side section and the deck-side section, the hinge (32) providing for pivotal movement of the deck-side section relative to the frame-side section on the second pivot axis, as per claim 14.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the intersecting pivot axes and U-joint of Smith '299 on the device of Hatfield in order to allow for tilting and rotating movement of the deck relative to the frame.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatfield in view of Smith '299 as applied to claim 7 above, and further in view of Barry et al, hereafter Barry.

The device is disclosed as applied to claim 7 above. However, the combination of Hatfield and Smith '299 fails to disclose the drive train including a drive shaft, an upper drive belt drivingly connecting the motor and the drive shaft, and a lower drive belt drivingly connecting the drive shaft and the mowing deck.

Barry discloses a similar device wherein the drive train includes a drive shaft (100), an upper drive belt (92) drivingly connecting the motor (48) and the drive shaft (100), and a lower drive belt (104) drivingly connecting the drive shaft (100) and the mowing deck (58a,b).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the drive train of Barry on the combination of Hatfield and Smith '299 in order to provide increased flexibility when cutting around posts or poles.

11. Claims 16-18, 20, and 21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatfield in view of Ferree et al, hereafter Ferree.

In regards to claims 16-18, and 23, Hatfield discloses a pull behind mower for cutting ground vegetation, the mower comprising:

a frame (12) adapted to be coupled to a vehicle (18) and rollingly supported on the ground; and

a mowing deck (24) coupled to the frame (12) and operable to cut the vegetation when the deck (24) is in an engaged position proximate the ground;

a motor (28) coupled to the frame (12) and providing power to the deck (24), as per claim 23;

the deck (24) being pivotable relative to the frame (12) on first and second distinct pivot axes (see figures 3 and 5), the deck (24) being selectively pivotable on the second pivot axes

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between the engaged position and a disengaged position when the deck (24) is pivoted upward away from the ground (see figure 5);

wherein the deck pivots through a second pivot angle of more than about 30° when pivoted between the engaged and disengaged position (see figure 5), as per claim 17.

However, Hatfield fails to disclose that the deck be lockable in the disengaged position and that the second pivot angle be more than about 45° , as per claim 18.

Ferree discloses a similar device wherein the mower deck (10) is pivotable into a disengaged position when the deck (10) is pivoted upward away from the ground and lockable in the disengaged position (see figure 6), the second pivot angle being more than 45° , as per claim 18.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the locking mechanism of Ferree on the device of Hatfield in order to provide a safe and easy position for service.

12. In regards to claims 20 and 21, Hatfield discloses wherein the deck (24) is pivotable relative to the frame (12) on the first pivot axis between an extended and retracted position (see figures 2 and 3) through an angle of more than about 20° when pivoted between the extended and retracted position, as per claim 21,

the first pivot axis being generally upright (see figures 2 and 3),

the second pivot axis being at least substantially perpendicular to the first pivot axis (see figures 4 and 5).

13. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatfield and Ferree as applied to claim 16 above, and further in view of Cowling.

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The device is disclosed as applied to claim 16 above. However, the combination of Hatfield and Ferree fails to disclose a plurality of casters rotatably coupled to the deck and operable to at least partly support the deck on the ground when the deck is in the engaged position.

Cowling discloses a similar device wherein a plurality of casters (60) are rotatably coupled to the deck (50) and operable to at least partly support the deck (50) on the ground when the deck (50) is in the engaged position (see figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the caster wheel support of Cowling on the device of Hatfield and Ferree in order to allow for the mower head to rotate in response to the contour of the ground.

14. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatfield and Ferree as applied to claim 21 above, and further in view of Smith et al, hereafter Smith.

The device is disclosed as applied to claim 21 above. However, the combination of Hatfield and Ferree fails to disclose wherein the first angle is more than about 30°.

Smith discloses a similar device wherein the first angle is more than about 30°.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the pivot angle of Smith on the device of Hatfield and Ferree in order to increase the width of the path being mowed.

15. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatfield and Ferree as applied to claim 23 above, and further in view of Scarborough.

The device is disclosed as applied to claim 23 above. Hatfield discloses a drive train (see figure 7) for drivingly coupling the motor (28) to the deck (24) so that the motor (28) powers the deck (24), the drive train including a drive shaft (97).

However, the combination of Hatfield and Ferree fails to disclose wherein at least a portion of the drive shaft is independently rotatable relative to the frame, the arm, and the deck on the first pivot axis.

Scarborough discloses a similar device wherein at least a portion of the drive shaft (not shown) is independently rotatable relative to the frame (12), the arm (26), and the deck (24) on the first pivot axis (32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the rotatable drive shaft of Scarborough on the combination of Hatfield and Ferree in order to reduce the force required to rotate the arm.

Conclusion

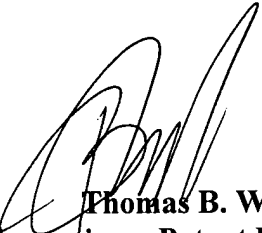
16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Allen et al, Liepold et al, Perry, Smith '306, and Gates have been cited as of interest.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Torres whose telephone number is 703-305-6953. The examiner can normally be reached Monday through Thursday from 7:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached at 703-308-3870.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-1113. The fax number for this Group is 703-305-3597.



Thomas B. Will
Supervisory Patent Examiner
Group Art Unit 3671

AMT
April 18, 2003